

116. SIGNALS.
Indicators--
Station.

[This Drawing is a reproduction of the Original on a reduced scale]

1154 of 1895

40/370

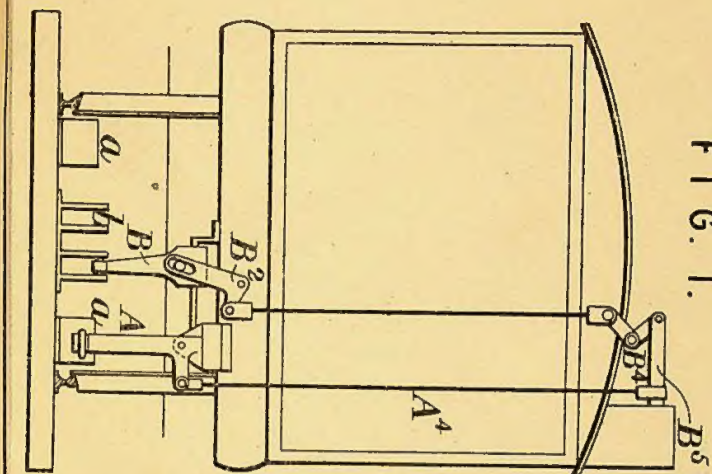


FIG. 1.

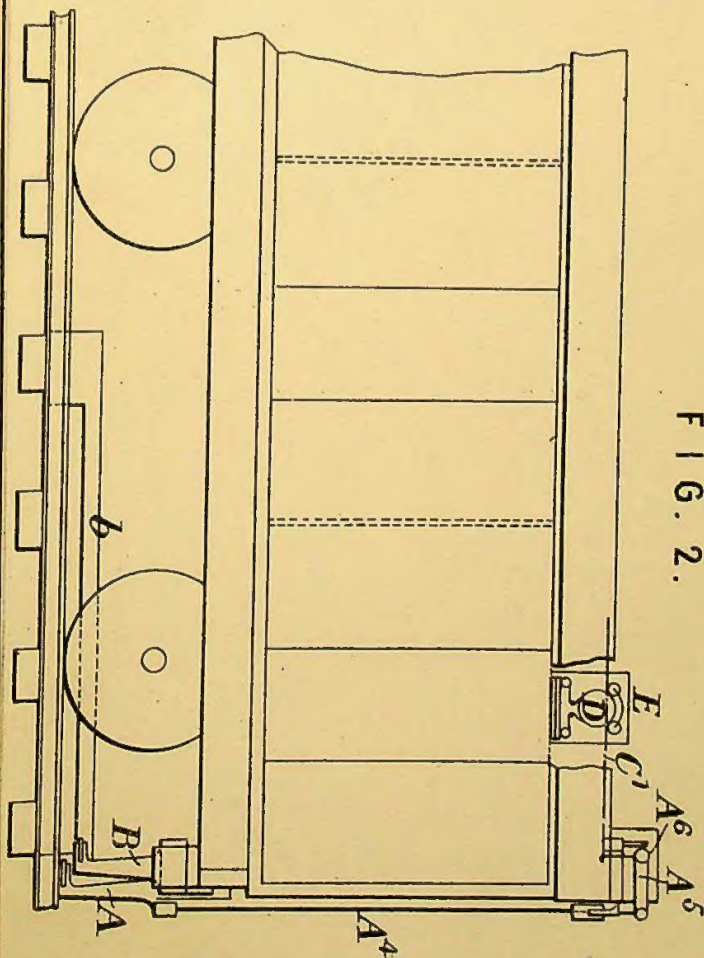


FIG. 2.



FIG. 3.

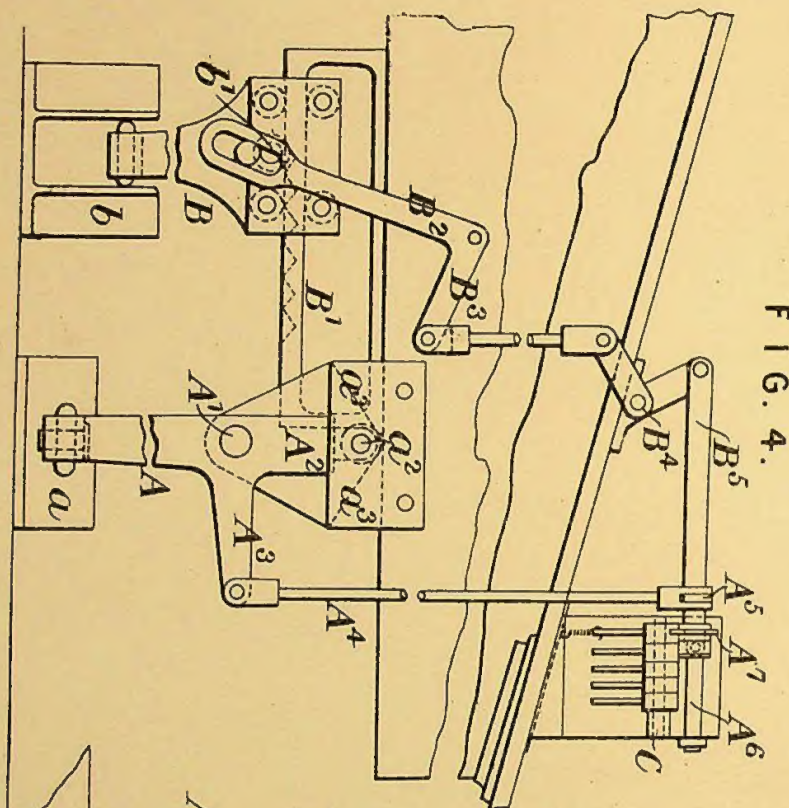


FIG. 4.

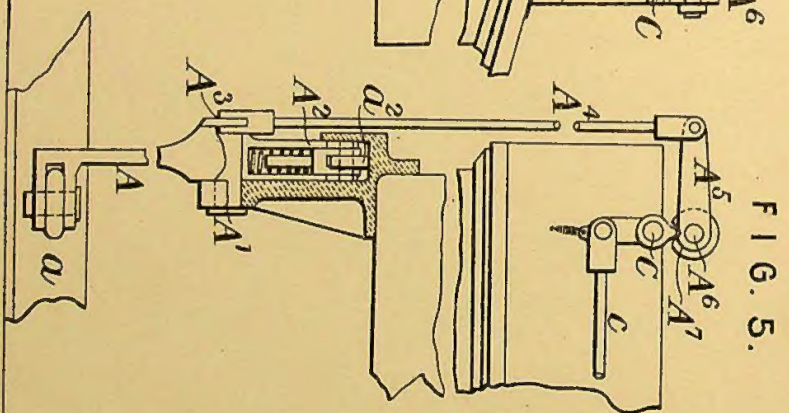


FIG. 5.

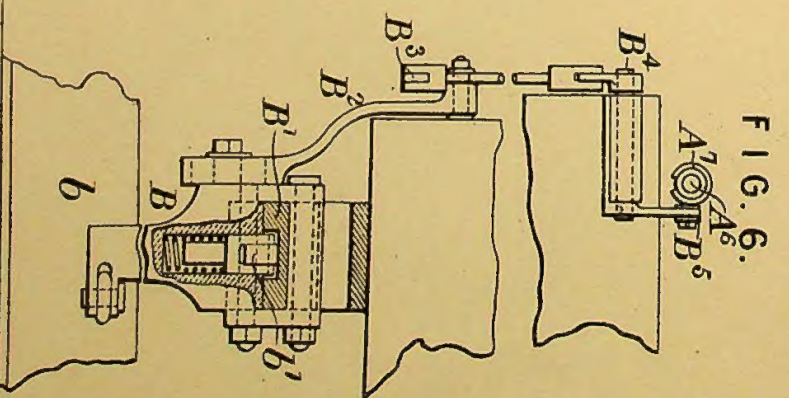


FIG. 6.

FIG. 7.

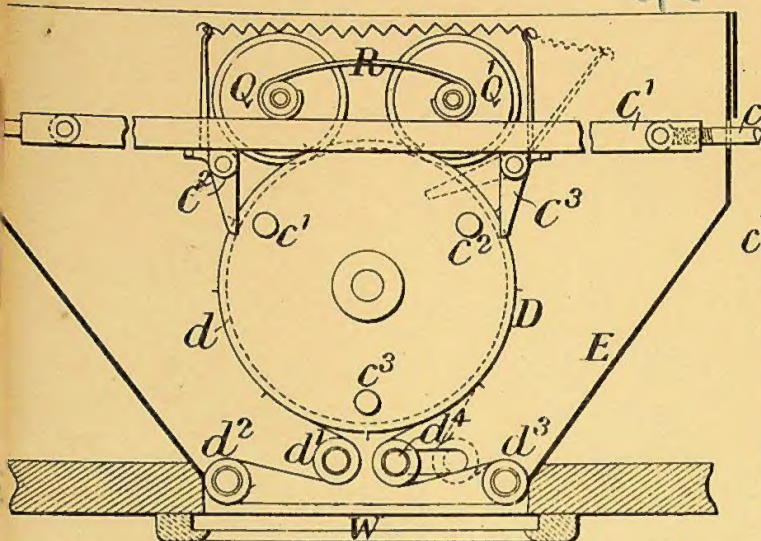


FIG. 8.

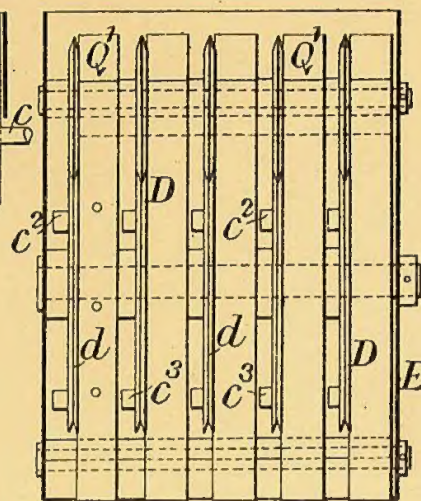


FIG. 10.

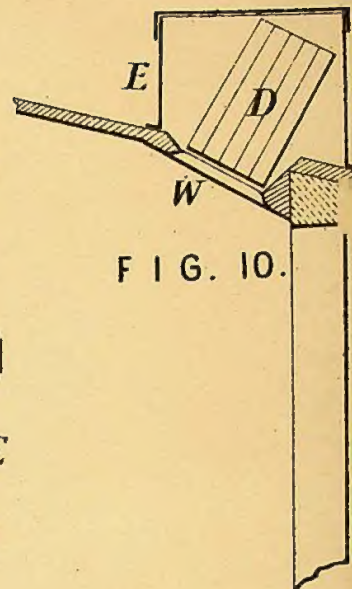


FIG. 9.

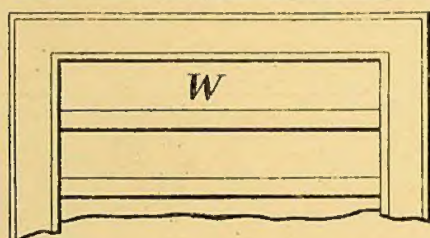


FIG. 11.

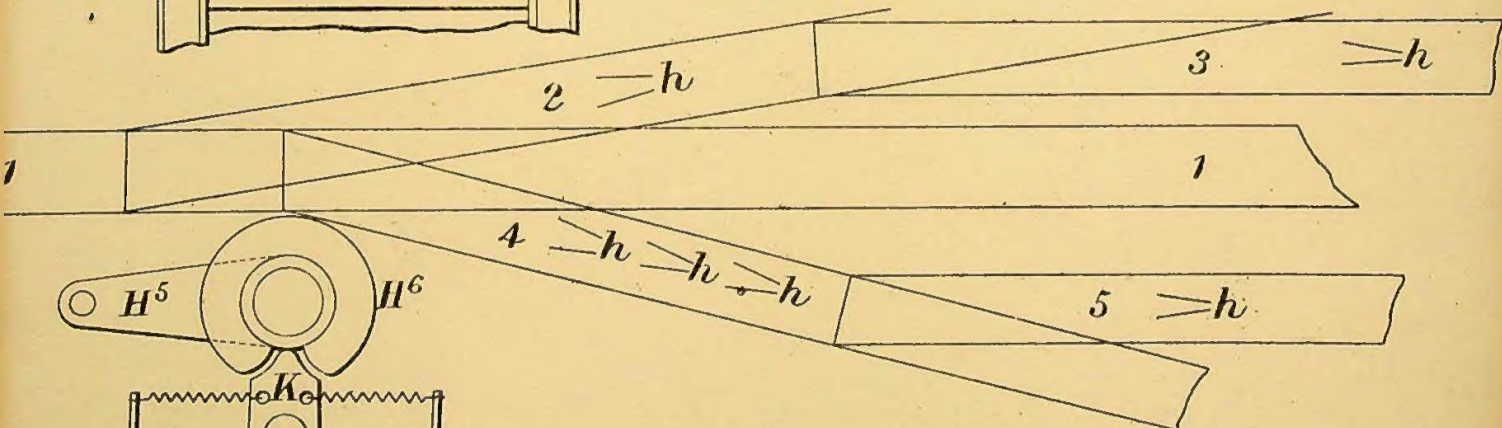
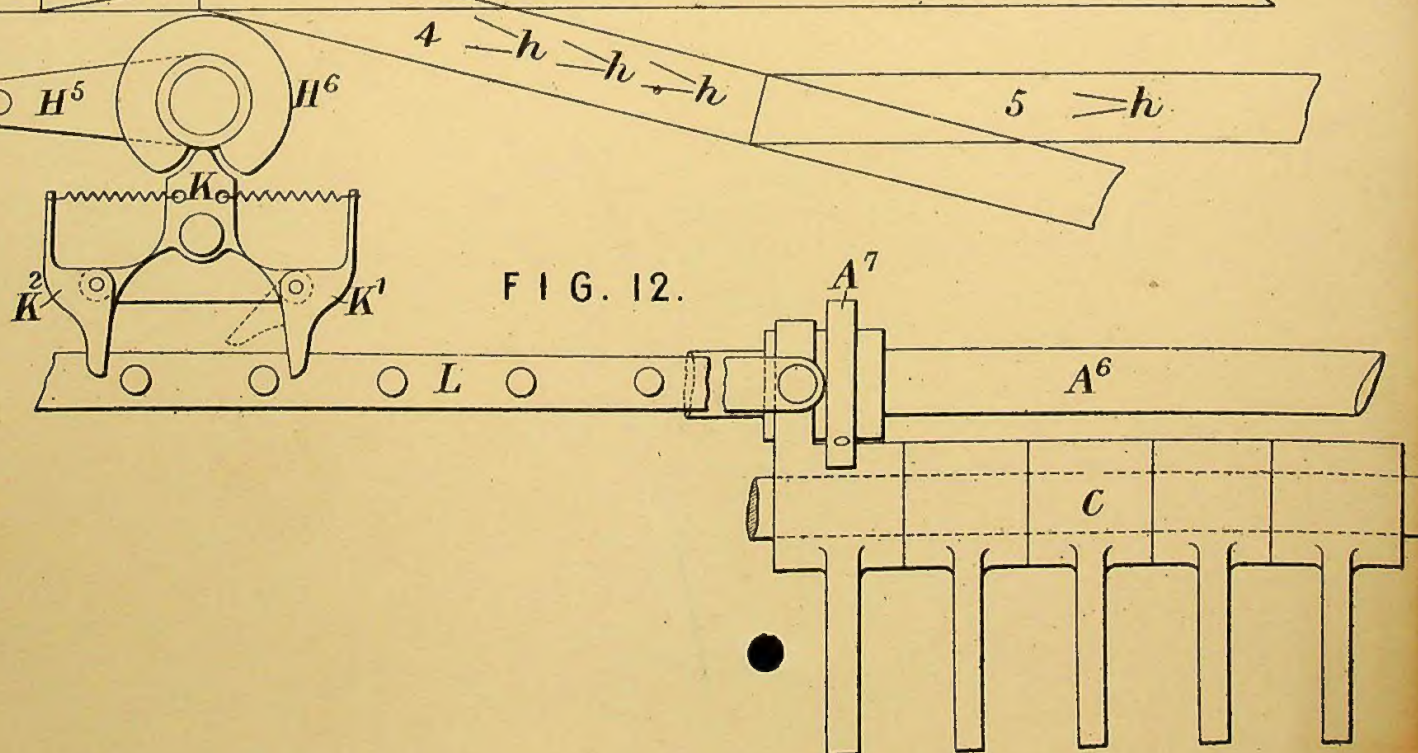


FIG. 12.



N^o 1154



A.D. 1895

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COMPLETE SPECIFICATION.

Apparatus for Shewing Names of Stations in a Railway Carriage.

We, JOHN STEEL DIXON SHANKS, of 42 Brougham Street, Belfast, County Antrim, Ireland, Engineer, and THOMAS HARRISON of Craigavad, County Down, Ireland, Barrister at Law, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

This invention relates to means of shewing in a railway carriage the names of the successive stations.

For this purpose the names of the stations are printed or otherwise marked on a tape or ribbon, which is moved by rollers on the roof of the carriage so as to present visibly in the carriage the name of the station which the train is approaching. The movement of the rollers is effected by ratchet and pawl gear worked by an arm, which hangs from the carriage, and is moved laterally by coming in contact with and travelling along a bar fixed on the ground between the rails at an angle to the line. In order that the desired action may take place when the carriage is turned end for end, two bars are provided one on each side of the centre line the one moving the arm when the carriage has its one end foremost, the other moving it when the carriage is turned end for end. In cases where the carriage has to run along a branch or different branches of a railway, several sets of the indicator tapes are provided, and by means of another arm acted on by bars placed at an angle to the line, as the train enters a branch, the action of the pendent arm first mentioned is transferred to the indicator tape appropriate to the branch.

The accompanying drawings represent apparatus according to our invention, the same letters of reference being used as far as possible in the several figures to denote the same parts.

Fig. 1 is an end view and Fig. 2 is a part side view of the carriage.

Fig. 3 is a diagram plan of part of the line and of a line branching from it.

Fig. 4 shews details of the pendent arms and their connections for moving the tapes and tape rollers.

Fig. 5 is another view of the first pendent arm partly in section.

Fig. 6 is a similar view of the second pendent arm and its connections for shifting from one set of tapes to another.

Figs. 7 and 8 are respectively front and side views of the tape rollers.

Fig. 9 is a view of part of the window through which the names of the stations are seen.

Fig. 10 is a section of the casing containing the tape rollers.

Fig. 11 is a diagram plan of part of a main line and branches and suited for a modified arrangement of mechanism for shifting the action on the tapes.

Fig. 12 is a side view of the gear for this purpose.

A and B are the two arms pendent from the end of each carriage, each having mounted at its lower end a roller which in the case of A runs along the one or the other of two obliquely placed bars *a a* according as the one or the other end of the carriage is foremost. The roller of the arm B runs between a pair of guide bars *b* placed near the entrance to a branch line, the ends of the bars being at an angle to the line. The arm A is one of a three armed lever pivotted at A¹, its vertical arm A² containing a spring plunger, having mounted on its top a roller *a*² running on the one or the other of two stationary inclines *a*³, so that when the arm A¹ is

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moved aside by the oblique bar a , and the roller a^2 is thus caused to travel along one of the inclines a^3 , the spring acts so as to cause the roller to run back to the middle position between the inclines, the arm A being thus restored to its normal position when it passes the oblique bar a . The third arm A^3 of the lever is connected by a rod A^4 to an arm A^5 of a rocking shaft A^6 which is mounted in bearings within a casing on the roof of the carriage. On this rocking shaft a notched disc A^7 is fitted to slide on a feather so that it must rock with the shaft.

The arm B is not mounted so as to swing like A but is fitted to slide step by step along a guide B^1 which has a number of wedge shaped recesses into one or other of which enters a roller b^1 mounted on a spring plunger accommodated in B. Thus, when the carriage enters a branch line, the roller at the lower end of B in passing between the two oblique guide bars b causes B to move along B^1 one division, and the spring pressed roller b^1 entering one of the recesses of B^1 holds B in the position to which it has been laterally moved. When the carriage enters another branch, another pair of guide bars b situated nearer to or farther from the middle line between the rails, causes the movement of B another step, and so on for every branch, B is moved a step to the one side of its first position. A pin on B works in a slot of the one arm B^2 of a bell crank lever, the other arm B^3 of which is linked to one arm of a bell crank B^4 pivotted on the roof of the carriage. The upper arm of B^4 is connected by a link B^5 to the disc A^7 , so that as B is moved step by step, the disc A^7 is also moved step by step along the rocking shaft A^6 so as to have its notch engaged with the tooth of one of a set of levers mounted free to turn on an axle C. Each of these levers is connected by a link c to a sliding rod C^1 (Fig. 7). On this rod are pivotted two spring pawls C^2 C^3 which act on pins c^1 c^2 c^3 projecting from the face of a drum D. Each drum has a grooved flange d into which engages the V shaped edges of flanges on two smaller drums Q Q^1 the arms of which are urged towards each other by a bent spring R. The tape or ribbon on which are painted the names of the successive stations on a main line or branch, wound on the drum Q, passes partly round D, the guide rollers d^1 d^2 along behind a glass W, then by the rollers d^3 and d^4 (which can be shifted so as to tighten the tape) again partly round D to the other drum Q^1 . The drum D may have pins projecting from its circumference to engage the tape and ensure its movement with the drum. It is to be understood that there are as many sets of drums D, Q Q^1 all side by side in a casing, as there are levers on C, steps on B^1 and sets of oblique guide bars b , that is to say, one set of each for every branch line. All the drums are situated in a casing E or on the roof of the carriage over an inclined glass W through which the passengers in the compartment can see the names of the stations on the tapes behind the glass. There are as many of the casings E and their contents as there are compartments, the rods c connecting the sliding bar C^1 of each to that of the next in order.

In cases where there are many branch lines for a carriage to pass over, there may not be room between the rails to accommodate all the guide bars b in their proper relative positions. In such cases we adopt the modified arrangements shewn in Figs. 11 and 12. In this case instead of the sliding arm B (Fig. 4) we employ a pendent arm like A acted on by inclined bars h situated near the entrances to the branches, and like the bars a provided in duplicate, so that the one or the other operates according as the one or the other end of the carriage is foremost. This pendent arm is linked as A is linked to a lever H^5 and notched disc H^6 (see Fig. 12) mounted on the roof of the carriage, the notch engaging with a tooth of a lever K on which are pivotted two spring pawls K^1 K^2 arranged to engage with pins on a sliding bar L which is linked to the notched disc A^7 on the rocking shaft A^6 which disc acts on one or other of the levers on C.

The apparatus operates as follows:—The arm B being in its initial position holding the disc A^7 engaged with the first of the levers on C, the arm A is moved aside by passing the first of the oblique bars a , and by this movement rocks the shaft A^6 and notched disc A^7 moving the first lever on C, and thereby the sliding

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bars C¹, in the casings E for the several compartments of the carriage. The first of the drums D in each casing E is thus turned one third round, turning by frictional contact the smaller drums Q Q¹ and moving the tape so as to present through the glass W the name of the next station. This action is repeated as long as the carriage runs along the main line, the first of the set of levers on C and drums D, Q and Q¹ alone being acted on. If after a number of such actions, the carriage runs into a branch, then the arm B is moved by the oblique guide bars *b* one step to the side, moving the disc A⁷ along the rocking shaft A⁶ so as to engage with the second of the levers on C. The second of the bars C¹ is now subject to the action of A, and by the movement of the second of the set of drums D, Q Q¹, a second tape bearing the name of stations on the branch line is moved by the action of A. When the carriage enters another branch, the arm B is moved another step, and thus a third tape is brought into action, and so on for successive branches. When the arrangement shewn in Figs. 11 and 12 is employed, the arm which takes the place of B, in passing from the main line 1 to a branch 2 meets an oblique bar *h* and thus motion is imparted to the notched disc H⁶, the lever K and pawls K¹ K² by which the slide L and disc A⁷ is moved one step to the right. When the carriage passes from branch 2 to branch 3 another oblique bar *h* causes the disc A⁷ to be moved another step. Again, when the carriage passes from 1 into branch 4, the three sets of bars *h* move the disc A⁷ three steps, and when the carriage enters another branch 5, another bar *h* causes the disc A⁷ to move still another step. Thus for every branch a separate tape is brought into action, each of these tapes bearing the names of the stations on the branch. It is to be understood that each tape has the space for one name left blank, this blank space being presented until the carriage has entered the branch, when the tape is moved to present the name of the first station on the branch.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed we declare that what we claim is:—

1. In apparatus for shewing names of stations in a railway carriage the combination of the oblique bar *a* the pendent arm A and its connections to the rocking shaft A⁶, the notched disc A⁷, the lever C moved by it and over each compartment, the pawl bar C¹ connected to C, the drums D, Q Q¹, the guide pulleys and tape marked with names of successive stations, substantially as described.

2. For each branch line the combination of the obliquely ended guide bars *b*, the sliding arm B and its connections to the notched disc A⁷ sliding along the rocking shaft A⁶, substantially as and for the purpose set forth.

3. The modified arrangement for branches, consisting of sets of oblique bars such as *a*, a pendent arm such as A and its connections to the notched disc H⁶, the said notched disc, the pawl lever K and sliding bar L connected to the notched disc A⁷, substantially as described.

4. The duplication of the oblique bars *a*, *b* and *h* to allow for the carriage travelling either end foremost.

Dated this 17th day of January 1895.

ABEL & IMRAY,
Agents for Applicants.